

## ABSTRACT OF THE DISCLOSURE

A thermally-assisted magnetic recording head and a magnetic recording apparatus having the magnetic recording head built in are disclosed. The magnetic recording head is capable of recording magnetic information by heating a recording unit of a recording medium and raising its temperature to reduce magnetic coercive force and then applying recording magnetic field to the recording unit having the reduced coercive force. The magnetic recording head has a light absorbing film having an aperture, a laser device emitting and directing light through the aperture to the recording medium to heat the recording unit and raise its temperature, and a recording magnetic pole for applying the recording magnetic field to the recording unit. In the aperture, an aperture width  $W_1$  is along a polarizing direction of the light emitted from the laser device while an aperture width  $W_2$  is approximately perpendicular to the polarizing direction of the aperture width  $W_1$ , and the aperture width  $W_1$  is shorter than the aperture width  $W_2$ . The heating source such as a laser device recedes from the medium to provide a unique configuration where a tip of the recording magnetic pole protrudes ahead of the heating source, and hence, heating beam and the recording magnetic pole can be located close to each other without losing sufficient energy density to heat the medium.

25

2025 RELEASE UNDER E.O. 14176